## Remarks

Claims **1-20** were and are pending in the present application.

### 35 U.S.C. 102 over U.S. 5,813,865 to Greenbowe et al.

The Examiner rejected Claims 1-10 and 14, and 15-19 as anticipated by U.S. 5,813,865 to Greenbowe et al. (hereinafter "Greenbowe"). Applicant respectfully traverses because Greenbowe does not teach each and every element of the claims alleged to be anticipated. General Elec. Co. v. Nintendo Co., Ltd., 179 F.3d 1350, 1356-57, 50 U.S.P.Q.2d 1910 (Fed. Cir. 1999).

### Greenbowe Lacks Essential Limitations in Claims 1-10 and 14

The Examiner misapprehends Greenbowe by contending that it teaches a code segment for presenting an in-context description of each outcome entity and the method used to compute the outcome entity's value (col. 4, lines 47-54). The Examiner also misapprehends Greenbowe by contending that it teaches a means for a learner to control a selected instrument entity, wherein each instrument entity excluded from learner control is controlled by a selected automated agent (col. 7, lines 65-67; col. 10, lines 4-12).

Pages 22-24 of the application provides the basis for the limitation "code segment for presenting an in-context description of each outcome entity and the method used to compute the outcome entity's value." There it explains that as the simulation is being run, a user can click on a pop-up menu for any quantity referenced or represented, at each location at which it is referenced or represented (p. 22, lines 25-33). The in-context pop-up menu provides a description of what that quantity is, what it measures, and how the quantity is computed (p. 23, lines 1-2). Nothing in Greenbowe provides such an in-context description, much less one that provides the method used to compute the selected quantity. The section cited by the Examiner (col. 4, lines 47-54) merely provides for the computer to respond to the user's selection by providing a graphic and audio display of how the results of the user's selections should be displayed, which is something that most modern application programs with a graphical user interface provide. It certainly does not allow for the user to choose any simulation-model outcome entity for an in-context description, much less the method used to compute the outcome

entity's value.

The application describes an automated agent which is an algorithm that strategically controls one of the input entities ("instrument quantity") through successive time periods. A section cited by the Examiner (col. 7, lines 65-67) only shows that the student can select one of three predefined concentration values as an input. A predefined, constant numeric value is not an algorithm that dynamically computes input values. Page 12, line 30 to page 13, line 2 of the application describes what an automated agent does, and examples of agent algorithms can be seen in Figure 14 and in Figure 17. As for the "guided discovery" and "guided lesson" options described in the next section cited by the Examiner (col. 10, lines 4-12), these appear to provide suggestions to the student about what he should do while building experimental configurations and performing experiments, but these options do not provide algorithms that directly select input values in the simulation, and there is no indication that the nature of the suggestions depend at all upon the state of the simulation model.

For the foregoing reasons alone, claims 1-10 and 14 are not anticipated by Greenbowe.

Moreover, the Examiner's rejection of the dependent claims also suffer a similar misapprehension. Claim 2 further provides for the learner to either select an instrument value or delegate the selection to an automated agent. As explained above, limitation on the choices available to the student and the textual guidance provided to help the student build the experiment are a far cry from the automated agent described in the application. Therefore, the learner cannot delegate anything to an automated agent in Greenbowe.

Claim 3 further requires the code segment for presenting an in-context description of each outcome entity and the method used to compute the outcome entity's value to provide a link to a description for another model entity. As discussed above, Greenbowe does not provide for any in-context description, and therefore cannot provide for a link to a description for another model entity.

Claim 4 further requires the code segment for presenting an in-context description of each outcome entity and the method used to compute the outcome entity's value to provide algorithmic details in describing the method of computation. As discussed above, Greenbowe does not provide for any in-context description, and therefore cannot provide for any algorithmic details.

Claim 5 further requires the code segment for presenting qualitative descriptions of one or more state changes in the simulation to automatically prioritize said descriptions and automatically discard descriptions that are less helpful to the learner. Pages 24-27 of the application describe a procedure for dynamically generating and prioritizing messages for the student that describe changes that have occurred in each successive time period. Greenbowe's "explainers" cited by the Examiner (col. 5, lines 16-19) are prerecorded video clips showing various people talking about solving chemistry problems. Though these clips are available for the student to browse, the clips do not indicate what has happened or what is happening in a specific run of the simulation, and it is apparent that it is up to the student to select video clips, rather than the system automatically formulating and selecting them for presentation based on specific occurrences in a simulation.

Claim 6 further requires the simulation model to be associated with a plurality of different problem scenarios. As described in pages 19-22 of the application, one simulation model created by designers can have many different problems scenarios created upon it, with different levels of difficulty, different available instrument entities, different available agents, and different activity goals. As cited by the Examiner (col 4, lines 16-20), Greenbowe's system provides different experiments for the student to choose from, but there is no indication that different experiments share the same simulation model with the model's set of defined entities.

Claim 7, which builds upon Claim 6, further requires that a designer be provided the capability for allowing the learner to control one set of instrument entities in one problem scenario and to control a different set of instrument entities in another problem scenario. As explained above, there is no indication that different experiments share the same simulation model with its set of defined entities. If two scenarios do not share the same set of defined entities and thus the same set of instrument quantities, then there is no possibility of varying which of the instruments quantities are controlled by the learner.

Claim 8 further requires that different sets of automated agents control the excluded instrument entities in different problem scenarios. Since, as explained above, Greenbowe's system does not have automated agents, it is therefore not possible to assign automated agents to control excluded instrument entities in different problem scenarios.

Claim 9 further requires that the designer be provided the capability to assign one set of

automated agents to an instrument entity in one problem scenario and a different set of automated agents to the instrument entity in another problem scenario. Since, as explained above, Greenbowe's system does not have automated agents, it is therefore not possible to assign one set of automated agents to an instrument entity in one problem scenario and a different set of automated agents to the instrument entity in another problem scenario.

Claim 10 further provides a development tool for defining model entities, properties, and simulation components. The application provides an overview of the development tool in pages 14-18, and various specific components of the development tool in pages 19-25 and in Figures 11, 15, 16, 17, 19, and 24. The Chemistry Workbench (col. 4, lines 26-36) cited by the Examiner allows a student to configure predefined elements, but does not allow the student to define any elements of the simulation model. The student cannot define coefficients of equations or algorithms, and cannot create new equipment, supplies, or materials that are not already defined in the system. Greenbowe does not mention whether any tools have been created for developing their simulation or others like it. Without specialized development tools such as that described in the application, it likely would be extremely difficult or laborious to create other complex simulation models.

For all of the foregoing reasons, Applicant respectfully requests that the Examiner withdraw the anticipation rejections of Claims 1-10 and 14.

Greenbowe Lacks Essential Limitations in Claims 15-19

As in the computer system claims, method Claims 15-19 also all require the limitations: code segment for presenting an in-context description of each outcome entity and the method used to compute the outcome entity's value; and means for a learner to control a selected instrument entity, wherein each instrument entity excluded from learner control is controlled by a selected automated agent. Therefore, Claims 15-19 are not anticipated by Greenbowe for the reasons stated above.

In addition, dependent Claims 16 (Claim 2), 17 (Claim 4), 18 (Claim 7) and 19 (Claim 10) all have the same or similar additional limitations as corresponding Computer system claims. Therefore the additional reasons stated above as to why the corresponding dependent computer system claims are not anticipated also apply to the method dependent claims. These are further

reasons that Claims 16-19 are not anticipated by Greenbowe.

For all of the foregoing reasons, Applicant respectfully requests that the Examiner withdraw the anticipation rejections of Claims 15-19.

## 35 U.S.C. 103 in light of Greenbowe et al.

The Examiner rejected Claims 11-13 and 20 as obvious over Greenbowe on the basis that Claims 11-13 and 20 all have the limitations anticipated by Greenbowe as they relate to the allegedly anticipated claims, and that the additional limitations provided in these claims are obvious additions to the anticipated limitations. Because, as described above, the basic premise that Greenbowe teaches all limitations of the anticipated claims is false, Claims 11-13 and 20 cannot be obvious for this reason. Therefore, Applicant respectfully requests that the Examiner withdraw the obviousness rejection of Claims 11-13 and 20.

## Conclusion

For the foregoing reasons, Applicant believes that Claims 1-20 are patentable, and respectfully request allowance. If there are any other matters that need to be addressed prior to allowance, please call the undersigned at the telephone number recited below for a telephone disposition.

| 2119 West Potomac Avenue, #2<br>Chicago, Illinois  60622<br>Telephone: 847-778-7895 | Respectfully submitted,<br><br>By _David A. Foster_ |
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